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Mean Places for 1882·0 *from other sources, not used in deducing the Comet's place.*

	h m s	s	° ′ ″	″	
g	9 58 42·248	+2·687	−18 52 12·35	−9·41	Lalande 19696.
h	58 50·307	+2·687	−18 50 23·72	−9·41	,, 19699.
t	40 51·344	+2·988	−22 6 28·81	−8·80	,, 19209.
u	45 36·905	+2·999	−22 27 53·31	−9·00	,, 19338.
w	39 13·433	+3·051	−22 49 10·45	−8·81	,, 19153,
	39 31·886	+3·048	−22 56 30·72	−8·78	,, 19164.
y	39 14·234	+3·079	−23 1 54·37	−8·88	,, 19154.

The observations were made and reduced by Mr. Graham.

On Photographs of the Great Comet (b) 1882. By David Gill, LL.D., Her Majesty's Astronomer at the Cape of Good Hope.

I have obtained photographs of the Great Comet of this year by attaching to the declination-axis-counterpoise of the 6-in. Grubb Equatorial an ordinary camera with a rapid portrait-lens by Dallmeyer of about 2½ inches aperture and 11 inches focal length.

The attachment was such that any motion given to the telescope tube was common also to the camera. During exposure the image of the comet's nucleus was kept upon the intersection of two webs of the filar micrometer by means of clockwork, aided by the fine slow motions in R.A. and Declination.

In Photograph 3 (which is the most perfectly focussed) the photographic images of the neighbouring stars are elongated in the direction of the comet's motion.

I am indebted to Mr. E. H. Allis, Photographer, Mowbray, for the loan of the camera in question, and for his assistance in the work. I was too much occupied with the observations of *Victoria* and *Sappho* to be able to turn my attention to photographing the comet till after Oct. 11, when the *Sappho* observations were finished.

The successful photographs that have been obtained are :—

No. 1. 1882 Oct. 19^{d} 15^{h} 45^{m} Cape M.T., Exposure 30^{m}.
No. 2. 1882 Oct. 20^{d} 15^{h} 30^{m} ,, ,, 1^{h}.
No. 3. 1882 Oct. 21^{d} 15^{h} 40^{m} ,, ,, 40^{m}.

Of these photographs paper copies are enclosed. After Oct. 21 the work was interrupted by moonlight, but it will be resumed at next new Moon.

With more sensitive plates and longer exposure I do not doubt that photographs may be obtained for some time to come.

There is a very marked difference between the photographic magnitude and the apparent magnitude of stars. There is also an apparent difference in the photographic magnitudes caused by errors in the correction of the spherical aberration of the lens,

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giving longer disks in one part of the field than in another. But there is no real difficulty in identifying all the photographed stars.

Photograph No. 2, particularly in the original negative, shows the curious envelope extending 2° beyond the head. It is less distinctly seen in Photograph 3.

This preliminary communication will afterwards be supplemented.

Royal Observatory,
Cape of Good Hope:
1882, *Oct.* 31.

[Since the foregoing paper was received, Mr. Gill has forwarded to the Society three additional photographs of which the following are the particulars:—

No. 4.	1882 Nov. 7^{d} 14^{h} 42^{m}	Cape M.T.,	Exposure	1^{h} 40^{m}.
No. 5.	1882 Nov. 13^{d} 14^{h} 0^{m}	,,	,,	1^{h} 20^{m}.
No. 6.	1882 Nov. 14^{d} 14^{h} 15^{m}	,,	,,	2^{h} 20^{m}.]

Observations of the Great Comet (b) 1882, *made at Auckland, New Zealand.* By J. T. Stevenson.

(*Extract from a letter to the Rev. T. W. Webb.*)

. . . I have the pleasure of now sending you a few particulars of the beautiful comet at present visible here. . . . I will begin with the head, which to me appeared at first nearly equal to a first-magnitude star, and, I may add, was seen in New Zealand in broad daylight when it was in perihelion.

I find that when viewed in the telescope the head appears just like a double star, when the power is not sufficient to separate the disks; of course I do not mean that the head is double, but it is elongated in an east and west direction, which is at present the direction of the comet's motion. On the 5th instant and once before I saw a *minute* point in the nucleus which glowed brightly.

The Dark Space behind the Head.—I notice what seems rather remarkable in the dark space: namely, the fact that whereas I am almost positive in other comets which I have seen that the dark space was broad, yet in this, the most brilliant one seen for many years, this space is very narrow. I may mention also that the head appeared slightly inclined towards the axis of the tail, and that the dark space is not directly behind, but as if the head were a little north of the axis of this space in the tail.

The Tail.—This is grand in the extreme; I have never seen anything equal to it. At the extremity it is at least several times broader than the Moon's apparent diameter. I can see the faintest stars visible through even the thickest portion of it. With a small glass I can trace plainly the dark space running up through it from the head; and here I notice another peculiarity—namely, that this space is not central in the tail, but divides it into two unequal portions, the northern of which is much broader than the other. Up to October 6, on the occasions

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